


*Amendments to the Claims*

This listing of claims will replace all prior versions, and listings of claims in the application.

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Claim 1 (original): A system for analysis or synthesis of materials, comprising:  
a first physical unit, comprising a mounting region for receiving a microfluidic device;

 at least one second physical unit spatially separated from the first physical unit and comprising a material transport system that includes at least a first interface component;


wherein the first physical unit and second physical unit are oriented with respect to each other whereby the material transport system provides a potential to the microfluidic device through the first interface component to transport material through the microfluidic device; and

wherein the first interface component is removable from the second physical unit.

Claim 2 (previously presented): The system of claim 1, wherein the material transport system is oriented within the second physical unit to provide at least one fluid to the microfluidic device in the mounting region of the first physical unit.

Claim 3 (previously presented): The system of claim 2, wherein the first interface component and the material transport system comprise at least one common conduit disposed in the second physical unit, the at least one conduit providing both a potential for moving material and at least a first fluid to the microfluidic device.

Claim 4 (original): The system of claim 1, further comprising a control unit operably coupled to the first interface component for controlling application of the potential to the microfluidic device.

 Claim 5 (previously presented): The system of claim 3, further comprising a control unit operably coupled to the material transport system, for controlling supply of fluid to the microfluidic device.

Claim 6 (original): The system of claim 1, wherein the first interface component comprises a sensor for measuring an electrical voltage within the microfluidic device.

Claim 7 (original): The system of claim 1, further comprising at least a second interface component, the second interface component providing at least one of potential and fluid to the microfluidic device.

Claim 8 (original): The system of claim 7, wherein the second interface component is removably attached to the second physical unit.

Claim 9 (previously presented): The system of claim 8, wherein the second interface component is mounted on the first interface component by a bayonet fitting.

Claim 10 (original): The system of claim 1, wherein the first physical unit further comprises a detector disposed therein, the detector being positioned to detect signals from the microfluidic device on the mounting region.

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Claim 11 (original): The system of claim 1, wherein the mounting region is open from the top for placing a microfluidic device on the mounting region.

Claim 12 (previously presented): The system of claim 1, further comprising a microfluidic device received in the mounting region of the first physical unit.

Claim 13 (previously presented): The system of claim 1, wherein the material transport system is arranged within a module unit which is separably connectable with the second physical unit.

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Claim 14 (new): A device for operating a microchip with a microfluid structure for chemical, physical, and/or biological processing, the microchip including supply elements corresponding with the microfluid structure, comprising  
a supply unit for providing a potential for moving substances corresponding to the microfluid structure, the supply unit having supply lines for enabling the potential to be

coupled to the microchip, the supply lines being arranged to interact with the supply elements which correspond to the microfluid structure,

an interface element, and

a holder for carrying the interface element,

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the interface element including a structure for connecting the supply lines with at least one of the supply units that correspond to the microfluid structure,

the interface element and the holder having structures for enabling the interface element to be releasably connectable to the holder so that the interface element can be selectively secured to and removed from the holder,

the interface element having exterior surfaces resistant to the substances processed by the microchip.

Claim 15 (new): The device according to claim 14, wherein the interface element has electrodes for supplying the microchip with electrical energy for generating a potential required for the microfluid movement of the substances on the microchip.

Claim 16 (new): The device according to claim 14, wherein the interface element has channels for supplying the microchip with mechanical energy for generating a potential required for the microfluid movement of the substances on the microchip.

Claim 17 (new): The device according to claim 14, wherein the interface element has channels for supplying the microchip with thermal energy for generating a potential required for the microfluid movement of the substances on the microchip.

Claim 18 (new) The device according to claim 15, wherein the channels are arranged for supplying the microchip with mechanical energy for feeding a pressurized fluid.

Claim 19 (new): The device according to claim 14, wherein the device is arranged for analyzing or synthesizing substances supplying the microchip with at least some of the necessary substances for processing or analysis, wherein the interface element has channels for supplying the microchip with these substances.

Claim 20 (new): The device according to claim 19, further including seals at the ends of the channels of the interface element for preventing the substances from exiting.

Claim 21 (new): The device according to claim 14, wherein the interface element includes an electrically insulating substrate in which the electrodes and channels are embedded.

Claim 22 (new): The device according to claim 21, wherein the substrate is a ceramic.

Claim 23 (new): The device according to claim 21, wherein the substrate is a polymer.

Claim 24 (new): The device according to claim 14, wherein the interface element and the supply unit are arranged and constructed so the interface is releasably attached to the supply unit.

Claim 25 (new): The device according to claim 24, wherein the interface element includes a bayonet lock for releasably attaching the interface unit to the supply unit.

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Claim 26 (new): The device according to claim 14, wherein the interface element and the supply unit respectively include a first coding element for identifying the interface element, a second coding element on at least one of the supply units and the microchip, the first and second coding elements corresponding with each other and interacting with each other.

Claim 27 (new): The device according to claim 14, wherein the microchip is in a first assembly, and the supply unit as well as the interface element are in a module, a second assembly, the module and second assembly being arranged and constructed so the module is releasably connected to the second assembly.

Claim 28 (new): The device according to claim 14, wherein the cooperating structures are such that the interface element is locked in place on a securing structure of the holder in response to rotation of the interface element relative to the holder.

Claim 29 (new): The device according to claim 14 further including a housing for the (a) microchip, (b) holder, (c) interface element and (d) supply unit, and wherein the holder and housing have cooperating structures for enabling the holder to be selectively (a) locked into place in the housing and (b) released and removed from the housing.

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Claim 30 (new): A device for operating a microchip with a microfluid structure for chemical, physical, and/or biological processing, the microchip including supply elements corresponding with the microfluid structure, comprising

a supply unit for providing a potential for moving substances corresponding to the microfluid structure, the supply unit having supply lines for enabling the potential to be coupled to the microchip, the supply lines being arranged to interact with the supply elements which correspond to the microfluid structure,

an interface element, and

a holder for carrying the interface element,


the interface element including a structure for connecting the supply lines with at least one of the supply elements that correspond to the microfluid structure,

the interface element and the holder having structures for enabling the interface element to be releasably connectable to the holder so that the interface element can be selectively secured to and removed from the holder,

the interface element consisting of materials and structures that can be cleans<sup>ed</sup>  
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with chemicals for reuse.

Claim 31 (new): The device according to claim 30 further including a housing for the (a) microchip, (b) holder, (c) interface element and (d) supply unit, and wherein the holder and housing have cooperating structures for enabling the holder to be selectively (a) locked into place in the housing and (b) released and removed from the housing.

Claim 32 (new): A device for operating a microchip with a microfluid structure for chemical, physical, and/or biological processing, the microchip including supply elements corresponding with the microfluid structure, comprising

 a supply unit for providing a potential for moving substances corresponding to the microfluid structure, the supply unit having supply lines for enabling the potential to be coupled to the microchip, the supply lines being arranged to interact with the supply elements which correspond to the microfluid structure,

an interface element, and

a holder for carrying the interface element,

the interface element including a structure for connecting the supply lines with at least one of the supply elements that correspond to the microfluid structure,

the interface element and the holder having structures for enabling the interface element to be releasably connectable to the holder so that the interface element can be selectively secured to and removed from the holder,

a housing for the (a) microchip, (b) holder, (c) interface element and (d) supply unit, the holder and housing having cooperating structures for enabling the holder to be selectively (a) locked into place in the housing and (b) released and removed from the housing.



Claim 33 (new): A system for enabling plural microchips with different microfluidic configurations to be interchangeably used, the different microfluidic configurations having different supply element configurations, comprising a supply unit for providing a potential for moving substances in a microchip being used in a device of the system, the supply unit having supply lines for enabling the potential to be coupled to the microchip being used in the device, a plurality of interface elements having supply lines for selective connection between the supply lines of the source and the supply elements of the microchips, different ones of the interface elements having different supply line configurations for supplying potentials from the supply lines of the source to the supply elements of the microchips with the different microfluidic configurations, the interface elements having exterior surfaces that are resistant to the substances processed by the microchip.

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Claim 34 (new): A system for enabling plural microchips with different microfluidic configurations to be interchangeably used, the different microfluidic configurations having different supply element configurations, comprising a supply unit for providing a potential for moving substances in a microchip being used in a device of the system, the supply unit having supply lines for enabling the potential to be coupled to the microchip being used in the device, a plurality of interface elements having supply lines for selective connection between the supply lines of the source and the supply elements of the microchips, different ones of the interface elements having different supply line configurations for supplying potentials from the supply lines of the source to the supply elements of the microchips with the different microfluidic

configurations, the interface elements consisting of materials and structures that can be cleaned with chemicals for reuse.

Claim 35 (new): A system for enabling plural microchips with different microfluidic configurations to be interchangeably used, the different microfluidic configurations having different supply element configurations, comprising a supply unit for providing a potential for moving substances in a microchip being used in a device of the system, the supply unit having supply lines for enabling the potential to be coupled to the microchip being used in the device, a plurality of interface elements having supply lines for selective connection between the supply lines of the source and the supply elements of the microchips, different ones of the interface elements having different supply line configurations for supplying potentials from the supply lines of the source to the supply elements of the microchips with the different microfluidic configurations, the interface element including a structure for connecting the supply lines with at least one of the supply elements that correspond to the microfluid structure, the interface element and the holder having structures for enabling the interface unit to be releasably connectable to the holder so that the interface element can be selectively secured to and removed from the holder, a housing for the (a) microchip, (b) holder, (c) interface element and (d) supply unit, the holder and housing having cooperating structures for enabling the holder to be selectively (a) locked into place in the housing and (b) released and removed from the housing.

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